

## LA FORNACE DA VASAIÒ TM IB DI HAGHIA TRIADA. L'IMPIANTO

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### SUMMARY

The aim of this paper is to deepen the investigation of the kiln published in 1975 by D. Levi and C. Laviosa, with commendable zeal and documentation. Construction details are now comparable with those of other kilns excavated in Late Minoan Crete.

The furnace, even if we do not know the layout of the general complex, demonstrates a very significant technological and constructive expertise and long-term experience.

The survey of the area near by the kiln did not give any clues to the extent of the *Ergasterion*. However, terracing walls and damp scores may be evidence of a larger layout developed on several levels, cut into the steep slope of the hillside. The model might not be dissimilar to that adopted in the context of the artisans' quarters of Mochlos and Gouves. The general setting surely included large areas indoors and outdoors in proximity to the kiln unearthed. About its use as a pottery kiln, the presence of silicate in association with calcite spatica, due to the fusion of wall and ceiling coatings, and recent archaeometrical researches seem conclusive.

According to the current typological classification (Evely 2000) the kiln is Type 2, with separate rooms and horizontal channels, widely attested between the MM IIIA and LM periods. Nine examples have been quoted by Evely (Zakro; Vathypetro; Knossos-EMS / 1-3; H. Triada, Knossos-House of Monolithic pillars/ a, b; Kannia-Mitropolis); we can add those of Kommos, Mochlos, Kokkino Phroudi, Festòs/I and Festòs/90. Outside of Crete two examples uncovered at Miletus should be mentioned. Some archaeometrical analysis would lead to the addition to the group of the furnace of Stylos-Chania. Such a large number of furnaces opens a comprehensive perspective on the technological developments of the type and possible regional variations, although their chronological sequence is yet to be verified. Some of the various characterizing elements are shown in Tables 1 and 2.

The furnace of H. Triada is, undoubtedly in the context of Cretan evidence, the most complete expression of that archetype with intermittent fire, open flame and sub-horizontal channels (climbing kiln). The arrangement recalls a technology already applied in the furnace of Festos/ Piazzale I, which is dated to a time before the catastrophe at the end of MM IIB; the structural solutions are in a line of experimentation leading toward the complete division between the place of production of hot air and the pottery load in order to control the firing process. The two rooms could have an unstable or permanent roof and according to Festos/I furnace walls with stone cemented by mud and coated inside with clay plaster mixed with straw.

The height of the firing chamber had to be compatible with that of the LM I *pithoi* (1.20 -1.50 m).

The stratified traces of a repeated use seem to assign its abandonment to the moment of the final destruction of the H. Triada Villa (end of LM IB); it's less easy, however, to fix exactly the time of its construction.

As for the construction details, it is easy to prove that the firing in the combustion chamber has been planned in the aim of the trajectories of oxidizing flows. If in the furnaces of the type-2 the basin of the fire is usually deep recessed to facilitate convective movements (Table 3) in our kiln placing the mouth of the channel to a higher level (+0.96 m) could collect and redistribute evenly the flow of hot air toward the conduits in order to avoid pernicious flashbacks. The *eschara* was built of mud brick above the channels and special vents were left in appropriate points of the wide soil, as suggested by the eastern channel setting details.

The artisans had also paid attention to roofing construction. Within the combustion chamber, a «light» structure of branches, cross grid embedded in the dough and clay, covered the southern sector, resting on pisé masonry. Its insulation was secured by the same mixture of wall coatings, made with relevant amounts of chopped straw. In the short northern sector of the room, whose walls are made of stone blocks, the coverage was rather lithic and at the free south side supported by a «false archivolt». Their top surface was inspected by the small scale of the eastern side. The cooking chamber roof had one or more vents useful for delaying or accelerating the draft. Several fragments attest to the existence of a short cylindrical vent constructed by hand and cemented to the roof covering, perhaps similar to that of the combustion chamber.

The maintenance of the optimal temperature (900° - 950°) necessary for the uniform firing of the pottery was also obtained with the locking of the north *stomion* with a mudbrick wall, whose traces remain in the east jamb.

The large size of the kiln and its proximity to the Villa suggest few considerations on its management and productive involvement within the context of the Minoan socio-economic pattern. We could, certainly, mention the relationship between «Palace» and workshop operators or the way of sharing the technological expertise.

The topographical distribution of the Evely-2 type covers all the 'palatial' Cretan settlements and the workshops are very close to the seats of power, political and/or religious. The progressive, integrated refinement of technology seems to lead to a system on a regional scale and to an enlarged share of operational issues and experience that lasted for no more than four or five generations of potters.

The high degree of specialization involved in this kiln arrangement seems, moreover, to implicate the presence of itinerant craftsmen who shared and distributed, together with the artistic and cultural standardization, the same mode of production, but not excluding the identity of each sub-regional district. Concerning the mobility of technitai, the Mycenaean tablets are illuminating documents regarding the status of the artisans. The new management of the sociopolitical power of Crete may have marked or stressed the birth of free-lance experts, and laid the foundations for sharing, innovation, and the transfer of specific technological knowledge outside of Crete, as in the furnaces of Miletus.